Government of Bengal

Department of Commerce and Labour

Annual Report on the Administration of the Indian Electricity Act, 1910, in Bengal

For the year

1939

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No. 1770.

FROM MR. S. W. REDCLIFT, M.I.E.E., M.I.E. (Ind.),
Electrical Adviser and Chief Electric Inspector, Bengal,

TO THE JOINT SECRETARY TO THE GOVERNMENT OF BENGAL,
DEPARTMENT OF COMMERCE AND LABOUR.

Calcutta, the 30th March/1st April 1940.

SIR,

I have the honour to submit herewith the annual report on the administration of the Indian Electricity Act, 1910, in Bengal for the year ending 31st December 1939.

I have the honour to be,

SIR,

Your most obedient servant,

S. W. REDCLIFT,

Electrical Adviser and Chief Electric Inspector, Bengal.

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Appendices.

ANNUAL REPORT ON THE ADMINISTRATION OF THE INDIAN ELECTRICITY ACT, 1910, IN BENGAL FOR THE YEAR ENDING 31st DECEMBER 1939.

Good electrical progress was made during the year 1939. Although only one new license was granted, the units sold to consumers was over 449·4 millions when compared with 420·5 millions sold during the previous year, an increase of more than 18·9 million units. This increase, however, is largely confined to the Calcutta areas. The number of consumers increased from 98 thousand in 1938 to nearly 105 thousand in 1939.

Apart from Calcutta, Howrah and their suburbs, for the electrification of which 14 licenses have been granted to the Calcutta Electric Supply Corporation, 37 other towns in Bengal now have a public supply of electricity and grants of other licenses are pending.

Six draft licenses were published during the year and are now under the consideration of Government.

There were 36 new applications for licenses before Government at the close of the year. Many of these are for small towns and, if the undertakings are to succeed, special care will be necessary in management.

Two licenses were revoked as no progress was made. Eight prosecutions were instituted for breaches of the Indian Electricity Act and Rules and convictions resulted in five cases. Three were unfinished at the close of the year.

Staff.

1. Mr. S. W. Redclift, M.I.E.E., M.I.E. (India), Electrical Adviser and Chief Electric Inspector, continued on special duty until 31st March 1939 when a report was submitted to Government and recommendations made to accelerate electrical development in Bengal. He proceeded on six months' leave out of India on the 14th April 1939 and Major A. B. Cullen, O.B.E., M.C., Senior Electric Inspector, Bengal, officiated for him from the 14th April 1936 till the 16th October 1939.

The other officers on 31st December 1939 were—

Electric Inspectors—

Mr. N. N. Sen Gupta, B.Sc. (Dacca), M.Sc., Tech. (Manchester), A.M.I.E. (India),

Mr. P. C. Sarker,

Mr. Yusuf Ali, and

Mr. H. Myers.

Assistant Electric Inspectors—

Mr. H. D. Bhattacharjee, and

Mr. M. Datta, M.Sc. (Cal.), M.Sc., Tech. (Manchester), A.M.I.E.E., A.Inst.P. (Lond.).

The post of Laboratory Assistant remained vacant from the beginning of the year till the 1st August 1939 when Mr. M. N. Roy Choudhury, M.SC., was appointed Laboratory Assistant in the vacancy, temporarily.

Administration and changes in the Act and Rules.

2. No amendments were made to any sections of the Indian Electricity Act during the year under review.

The following Indian Electricity Rules were amended during the year: 51, 60, 64(*2*), 73(*1*), 74(*2*), 120 and 124. Brief notes on these amendments are—

(*a*) *Rule 51.*—Relating to identification of earthed and earthed neutral conductors and positions of switches and cut-outs therein. The amendments of note in this rule are the inclusion of earthed conductors and the necessity of the identification of both the earthed and earthed neutral conductors near the point of commencement of supply, or near the meter board, as the case may be, on the part of the owner of any installation. The time allowed to meet the requirements of this rule for installations in use prior to 23rd December 1939 has been extended to 23rd December 1940.

(*b*) *Rule 60.*—With regard to general precautions applicable to supply at medium and high pressure, this rule has been amended as well as amplified.

(*c*) *Rule 64(2).*—Relating to the word "Caution" to be marked on high pressure apparatus and on all supports of high pressure aerial lines. Only a minor amendment has been made in this case.

(*d*) *Rule 73(1).*—Relating to safety-devices for aerial lines. Aerial lines made of insulated cables have been exempted from the application of the amended rule.

(*e*) *Rule 74(2).*—Concerns the procedure to be adopted when erecting a telegraph line which will cross or be in proximity to an aerial line. Some material alteration has been made in this case. The rule, of course, applies also to telephone lines.

(*f*) *Rule 120.*—Relating to the responsibility of Agents and Managers in observance of the Indian Electricity Rules. The language has been modified to make the rule clearer.

(*g*) *Rule 124.*—Relating to penalty for breach of rules.

With regard to Indian Electricity Rule 51, it may be mentioned that Government of Bengal notifications Nos. 1961 and 1962 Com., dated 30th June 1939, relaxed the rule by extending the period of concession presecribed in the proviso to that rule from the 1st July 1939 to 1st July 1940 in respect of all consumers' systems connected to electric licensees' mains in Bengal, prior to the 1st May 1937. The rule, however, was subsequently amended, *vide* Central Electricity Board notification No. A. 803(1), dated the 21st December 1939, and the period of concession was extended up to the 23rd December 1940, as has already been noted above.

License granted.

3. The following electric license was granted during the year under review:—

The Suri Electric License, 1939, was granted to Mr. K. C. Datta who has his registered office at No. 83, Chowringhee Road, Calcutta.

Draft licenses under consideration.

4. The following draft licenses were published but had not been granted at the close of the year:—

(1) Bhola Electric License.

(2) Patuakhali Electric License.

(3) Dinajpur Electric License.

(4) Bogra Electric License.

(5) Brahmanbaria Electric License.

(6) Madaripur Electric License.

A draft license for Kushtia was published in the year 1938 by the proprietor of the existing undertaking, which is now working under section 28 (*1*) of the Act, but it is still under the consideration of Government.

Licenses revoked.

5. (1) Natore Electric License, 1937, granted to Mr. N. K. Ghosh, was revoked on the 15th July 1939 under Government of Bengal, Department of Commerce and Labour, notification No. 1990Com., dated the 4th July 1939.

(2) Jhalakati Electric License, 1938, granted to Messrs. B. K. Mookherjee and Brothers was revoked under Government of Bengal, Department of Commerce and Labour, notification No. 2979, dated the 21st September 1939.

Preliminary applications.

6. At the close of the year certain preliminary applications for licenses were under the consideration of Government, viz., (1) Gaibandha, (2) Ranaghat, (3) Santipur, (4) Bagerhat, (5) Noakhali, (6) Serajganj, (7) Kishoreganj, (8) Tangail, (9) Kalna, (10) Siliguri, (11) Jamalpur, (12) Bishnupur, (13) Perojpur, (14) Sherpur, (15) Manikganj, (16) Rajbari, (17) Bolpur, (18) Chaumuhani, (19) Ghatal, (20) Jhalakati, (21) Budge Budge, (22) Kushtia, (23) Kamalaghat, Mirkadim, etc., (24) Sitarampur, Niamatpur, etc., (25) Tamluk, (26) Nilphamari, (27) Katwa, (28) Narsindi Bandar, (29) Hajiganj, (30) Comilla, (31) Azimganj and Jiaganj, (32) Diamond Harbour, (33) Uluberia, (34) Basirhat, (35) Natore and (36) Netrokona.

Progress made in licenses now in force.

7. There has been a fair amount of activity in all licensed areas during the year, but industrial load is needed in most mufassal areas. Those waterworks which have not yet been electrified are valuable loads which could be supplied by the licensees concerned. The industrial and waterworks loads have a bearing on the rates charged to domestic consumers and both loads need developing in the best interests of the public.

I would again invite, for the favourable consideration of Government, another important point which would materially assist newly licensed undertakings and that is the early electrification of Government buildings within all licensed areas of supply. The progress in this direction is very slow, although some progress has been made.

Appendix II of this report furnishes certain information including the capital expenditure, units generated and sold in the several undertakings now working, for which accounts are available.

Particulars of licensees operating in Bengal [including sanctions under section 28(*1*) for public supply], together with the names and addresses of the licensees and/or managing agents, are set out in Appendix III of this report.

Licenses of various titles and dates held by the Calcutta Electric Supply Corporation, Limited.—All licenses under the management of the Calcutta Electric Supply Corporation, Limited, are progressing satisfactorily. There were no complaints calling for comment.

The new power station at Mulajore was practically completed by the end of the year under review and consists of 8 Babcock and Wilcox water tube boilers, each having a normal evaporation capacity of 100,000 lbs. per hour, and two 30,000 K. W. Parsons turbo-alternators, generating direct at 33,000 volts, together with the necessary auxiliaries, transformers and switchgear. This new power house, together with the present Southern and Cossipore power stations, should meet the increasing demands for some years to come.

The continued replacement of overhead mains by underground cables during the past few years has resulted in a marked improvement in the public streets generally and eliminated a potential source of danger to the public.

The nature of supply in the several areas is as under:—

Alternating current.

(*a*) 20,000 volts, 3-phase, 50 cycles.

(*b*) 6,000 volts, 3-phase, 50 cycles.

(*c*) 3,300 volts, 3-phase, 50 cycles.

(*d*) 400 volts, 3-phase, 50 cycles.

(*e*) 230 volts, single-phase, 50 cycles.

Direct current.

(*a*) 450 volts }
(*b*) 225 volts } 3-wire system.

The following figures indicate the rate of growth of the undertaking as a whole:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	228,694	59,372	3,059	216	184,375
1936 ..	238,618	66,625	1,723*	236	184,375
1937 ..	254,016	73,929	1,802*	253	203,775
1938 ..	294,281	80,129	1,850*	272	203,775
1939 ..	310,529	84,501	2,148*	280	264,775

*The number of medium pressure consumers is given as 1,723 in 1936 against 3,059 in 1935. The reason for this difference is that the 1935 figures include all those consumers who are supplied at the licensees' old "D" rate. It would have been more correct to have classified some of these consumers as "low pressure" and this has been done.

Darjeeling Electric License (1913).—The licensees carried out surveys of several sites with the object of building a new hydro-electric power station of greater capacity than the present one at Sidrapong, but had not formulated any definite proposals by the end of the year under review.

The nature of supply is as under:—

Alternating current.

Generation and distribution—400/6.000 volts and 400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	1,355	1,105	7	6	930
1936 ..	1,288	1,110	9	3	1,130
1937 ..	1,313	1,110	14	3	1,000
1938 ..	1,342	1,228	14	3	1,200
1939 ..	1,360	1,360	16	3	1,200

Hooghly-Chinsura Electric License (1919).—This undertaking receives a supply in bulk, at high pressure, from the Gourepore Electric Supply Company, Limited, at Naihati.

Several complaints were received from consumers during the year. The undertaking has made some headway, as will be seen from the figures below.

The nature of supply is as under:—

Alternating current.

(*a*) 6,600 volts, 3-phase, 50 cycles.

(*b*) 400 volts, 3-phase, 50 cycles.

(*c*) 230 volts, single-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.V.A. of transformers installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	540	847	35	..	312
1936 ..	593	898	34	..	312
1937 ..	614	909	35	..	312
1938 ..	636	987	42	..	312
1939 ..	674	1,033	47	..	312

Burdwan Electric License (1920).—The undertaking does not make much headway. The licensees reduced the rate of charge for lights and fans by allowing a rebate of anna one per unit metered subject to certain conditions.

The nature of supply is as under:—

Alternating current.

Generation and distribution—

(*a*) 2,300 volts, 3-phase, 60 cycles.

(*b*) 400 volts, 3-phase, 60 cycles.

(*c*) 230 volts, single-phase, 60 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	518	866	76	1	400
1936 ..	647	855	77	1	400
1937 ..	662	841	81	1	400
1938 ..	676	837	83	1	400
1939 ..	683	824	84	1	400

Mymensingh Electric License (1922).—Some improvement was made during the year, but a number of wooden posts still remain to be replaced by steel posts and many service lines require reconstruction in order to bring them into conformity with the Indian Electricity Rules.

No complaints were received during the year under review.

The nature of supply is as follows:—

Generation and distribution—460/230 volts, D. C. 3-wire system.

The following figures are furnished for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	263	596	1	..	200
1936 ..	286	623	5	..	200
1937 ..	347	638	7	..	200
1938 ..	362	663	7	..	200
1939 ..	420	708	8	..	200

Dacca Electric License (1925).—The supply of energy to the public has been satisfactory. The licensees are constructing a new power station, and the work is making satisfactory progress. It is hoped that the new power house will be ready to be put into operation by the middle of 1940.

Clauses 3 and 4 of the license regarding area of supply and nature of supply, respectively, were amended, *vide* Government of Bengal, Department of Commerce and Labour, notification No. 2838Com., dated the 9th September 1939.

The new nature of supply will be as follows:—

Alternating and direct current.

(*a*) 10,000 and 6,000 volts, 3-phase, 50 cycles.

(*b*) 400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

(*c*) Distribution—440 and 220 volts, D. C., 3-wire system.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	1,996	1,955	114	..	1,500
1936 ..	2,087	1,961	121	..	1,500
1937 ..	2,211	2,266	123	..	1,500
1938 ..	2,480	2,485	128	..	1,750
1939 ..	2,676	2,666	145	2	1,750

Chittagong Electric License (1926).—This undertaking receives a supply in bulk at high pressure from the Assam-Bengal Railway.

Progress of the undertaking has been satisfactory during the year. No complaints were received.

The proposal to instal their own generating station has been held in abeyance due to the war, and a new agreement has been entered into with the Assam-Bengal Railway for the supply of energy in bulk.

The nature of supply is as under:—

6,000 volts and 400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.V.A. of transformers installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	687	1,360	36	2	475
1936 ..	690	1,367	39	2	520
1937 ..	700	1,419	41	1	520
1938 ..	720	1,535	50	1	395
1939 ..	800	1,596	56	1	395

Berhampore Electric License (1928).—A slight improvement has been made in the management of the undertaking.

The relationship between the Managing Agents and the Local Authorities has improved to some extent.

The licensees applied for an extension of area of supply, which was under consideration of Government at the end of the year.

The nature of supply is as under:—

Direct current.

Generation and distribution—

(*a*) 440 volts } 3-wire system.
(*b*) 220 volts }

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	159	219	7	..	124
1936 ..	159	220	6	..	124
1937 ..	170	238	6	..	124
1938 ..	163	250	6	..	124
1939 ..	223	274	7	..	124

Rangpur Electric License (1928).—The supply of energy had to be curtailed for some time due to trouble with two of the generating sets. The general management of the undertaking leaves much to be desired. The undertaking makes no headway; the number of consumers has decreased.

The nature of supply is as under:—

Alternating current.

Generation and distribution—3,300 volts and 400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	209	370	4	..	245
1936 ..	213	397	4	..	245
1937 ..	219	417	4	..	310
1938 ..	241	445	3	..	310
1939 ..	249	438	3	..	310

Bhatpara Riverside Electric (Distribution) License (1929).—This undertaking receives a high pressure supply in bulk from the Calcutta Electric Supply Corporation, Limited. No complaints were received during the year. The undertaking is developing slowly.

The nature of supply is as under:—

Alternating current.

(*a*) Bulk supply received at 3,300 volts, 3-phase, 50 cycles.

(*b*) Distribution—400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.V.A of transformers installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	215	291	15	..	150
1936 ..	297	340	26	..	225
1937 ..	388	384	26	..	325
1938 ..	456	419	34	..	325
1939 ..	528	447	44	..	325

Kurseong Electric License (1929).—The supply of energy to consumers has been satisfactory and the undertaking is making steady but slow progress.

Messrs. Goenka & Co., Kurseong, were managing the undertaking as secretaries during the year.

The nature of supply is as under:—

Alternating current.

(*a*) Generation and transmission—3,300 volts, 3-phase, 50 cycles.

(*b*) Distribution—400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	174	234	1	..	400
1936 ..	246	306	1	..	400
1937 ..	284	336	2	..	400
1938 ..	294	367	3	..	400
1939 ..	326	393	3	..	400

Narayanganj Electric License (1930).—This undertaking is giving satisfactory service to the public. No complaints were received during the year. Many service connections have been improved, but there is much to be done still in order to bring the works into conformity with the Indian Electricity Rules.

The nature of supply is as under:—

Alternating current.

Generation and distribution—6,000 volts and 400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	354	585	17	1	255
1936 ..	319	597	18	..	255
1937 ..	364	632	25	..	255
1938 ..	468	714	33	..	255
1939 ..	508	766	36	..	435

Comilla Electric License (1931) (revoked).—A supply of energy to the public is still being given under sanction issued by Government under section 28 (*1*) of the Act, and the supply appears to have been satisfactory as no complaints have been received.

The license applied for by the Comilla Electric Supply Company, Limited, was still under consideration of Government at the end of the year.

The nature of supply is as under:—

Alternating current.

Generation—440 volts, 3-phase, 50 cycles.

Transmission—3,300 volts, 3-phase, 50 cycles.

Distribution—400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	67	185	2	..	100
1936 ..	86	245	2	..	130
1937 ..	177	327	10	..	255
1938 ..	208	447	10	..	255
1939 ..	234	539	13	..	255

Serajganj Electric License (1931) (revoked).—The undertaking continued to be run during the year by the Lahore Electric Supply Company, Limited, under a sanction granted by Government under section 28 (*1*) of the Act. The supply of energy to the public appears to have been satisfactory as no complaints were received during the year.

The nature of supply is as under:—

Direct current.

Generation and distribution—

(*a*) 460 volts }
(*b*) 230 volts } 3-wire system.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	26	220	..	..	90
1936 ..	34	195	1	..	90
1937 ..	55	222	1	..	90
1938 ..	67	249	1	..	90
1939 ..	77	271	1	...	90

Asansol Electric License (1932).—High presure supply, in bulk, is obtained from the Dishergarh Power Supply Company, Limited. The supply of energy to the public appears to have been satisfactory and no complaints were received during the year.

The nature of supply is as follows:—

Alternating current.

(*a*) Bulk supply received at 11,000 volts, 3-phase, 50 cycles.

(*b*) Distribution—400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.V.A. of transformers installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	114	237	..	..	200
1936 ..	113	254	5	..	200
1937 ..	148	311	6	..	200
1938 ..	242	361	8	..	200
1939 ..	285	427	10	..	235

Khulna Electric License (1932).—The supply of energy to the public has been satisfactory and no complaints were received from the consumers. Development is slow, but the undertaking appears to be making satisfactory progress.

The nature of supply is as under:—

Alternating current.

Generation and distribution—3,300 volts and 400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K. W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	65	130	5	..	120
1936 ..	205	180	12	..	120
1937 ..	230	210	11	..	120
1938 ..	235	260	10	..	240
1939 ..	285	330	11	..	240

Naihati Electric License (1932).—This undertaking is supplied in bulk from the Gourepore Electric Supply Company, Limited, Naihati.

The supply of energy to the public has been satisfactory and no complaints were received from the consumers.

The licensees applied for an extension of area of supply, which was under the consideration of Government at the end of the year.

The nature of supply is as under:—

Alternating current.

400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.V.A. of transformers installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	59	81	2	..	150
1936 ..	131	150	4	..	150
1937 ..	153	180	5	..	150
1938 ..	183	222	7	..	150
1939 ..	209	244	8	..	150

Midnapore Electric License (1932).—The supply of energy to the public was satisfactory throughout the year. No complaints were received. Some progress in developments of loads was made during the year. The licensees reduced their rate of charge in respect of 3,000-volt non-industrial supply in the year under review.

The nature of supply is:—

Alternating current.

Generation—3,300 volts, 3-phase, 50 cycles.

Distribution—3,000 volts, 3-phase, 400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	74	84	..	..	144
1936 ..	243	160	10	1	144
1937 ..	321	204	14	1	144
1938 ..	416	280	15	2	144
1939 ..	380	319	15	3	288

Bankura Electric License (1932).—The supply of energy to the public appears to have been satisfactory as no complaints have been received from consumers.

The nature of supply is as follows:—

Alternating current.

Generation—3,300 volts, 3-phase, 50 cycles.

Distribution—3,300 volts, 3-phase, 400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following were the particulars of the load at the close of the year:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K. W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1937 ..	44	94	2	..	144
1938 ..	113	152	7	..	144
1939 ..	131	212	9	..	144

Dishergarh Electric License (1932).—The licensees' main business is the supply of energy to the collieries. They, however, supply energy in bulk to the Asansol Electric Supply Company, Limited, and to the Barakar Electric Supply Company. No complaints were received during the year. The supply was satisfactory. The existing area of supply was extended and the license amended under Government of Bengal, Department of Commerce and Labour, notification No. 494Com., dated the 13th February 1939.

The nature of supply is as follows:—

Alternating current.

(*a*) Generation—11,000/3,300 volts, 3-phase, 50 cycles.

(*b*) Distribution—11,000/3,300 volts, 3-phase, 400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K. W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	11,500	4	1	9	12,000
1936 ..	12,200	4	1	10	12,000
1937 ..	12,200	3	1	10	11,000
1938 ..	13,800	4	..	10	11,000
1939 ..	13,837	4	..	10	16,000

Krishnagar Electric License (1932).—The undertaking has made some progress during the year. No complaints have been received.

The nature of supply is as follows:—

Alternating current.

Generation—440 volts, 3-phase, 50 cycles.

Distribution—400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following were particulars of load at the close of the year:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1936 ..	80	93	2	..	80
1937 ..	131	141	3	..	80
1938 ..	222	202	6	..	195
1939 ..	297	231	8	..	195

Jalpaiguri Electric License (1933).—Supply of energy to the public was satisfactory throughout the year. No complaints were received. The undertaking has made satisfactory progress during the year.

The nature of supply is as follows:—

Alternating current.

Generation and distribution—400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	117	190	1	..	120
1936 ..	225	288	6	..	156
1937 ..	308	364	9	..	156
1938 ..	367	426	11	..	156
1939 ..	420	477	13	..	281

Gourepore Electric License (1933).—Supply of energy throughout the year was satisfactory. The load is mainly a jute mill load. The licensees also supply energy to the East India Electric Supply and Traction Company, Limited, at Hooghly and Bansberia and to the Naihati Electric Supply Company, Limited, at Naihati.

The nature of supply is as under:—

Alternating current.

Generation and distribution—6,600 volts, 3-phase, and 550 volts, 3-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.V.A. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. V. A.				
1935 ..	15,996	..	1	6	29,350
1936 ..	19,463	..	1	7	29,350
1937 ..	19,502	..	1	7	29,350
1938 ..	19,384	..	1	7	29,350
1939 ..	20,270	..	1	7	36,250

Barisal Electric License (1933).—The supply of energy to the public has been satisfactory and no complaints were received during the year. The undertaking has made some progress during the year.

The nature of supply is as follows:—

Alternating current.

Generation and distribution—3,300 volts, 3-phase, 400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	114	65	6	..	100
1936 ..	175	130	10	..	160
1937 ..	201	199	4	..	160
1938 ..	233	287	3	..	160
1939 ..	295	374	6	..	160

Associated Power (Bengal) Electric License (1934).—The supply of energy by the licensees is chiefly in connection with collieries, and mainly within the jurisdiction of the Electric Inspector of Mines in India. They, however, also supply energy in bulk to the Raneegunj undertaking. A new steam turbo-generating set was installed during the year. The existing area of supply was extended and the license amended under Government of Bengal, Department of Commerce and Labour, notification No. 1185Com., dated the 6th April 1939.

The nature of supply is as under:—

Alternating current.

Generation—3,300 volts, 3-phase, 50 cycles

Distribution—10,000 volts, 3-phase, 50 cycles, and 3,000 volts, 3-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	3,500	..	..	3	3,250
1936 ..	3,500	..	..	5	2,750
1937 ..	3,570	..	..	6	4,500
1938 ..	4,600	..	..	7	4,500
1939 ..	4,880	..	..	12	7,500

Rajshahi Electric License (1935).—The undertaking has made very satisfactory progress during the year. No complaints were received from consumers. The licensees reduced the rate of charge for domestic supply (lights and fans only) with effect from 1st May 1939.

The nature of supply is as follows:—

Direct current.

Generation and distribution—

(*a*) 460 volts } 3-wire system.
(*b*) 230 volts }

The following were particulars of the load at the close of the year:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K. W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1936 ..	212	336	4	..	100
1937 ..	310	455	6	..	100
1938 ..	525	647	7	..	215
1939 ..	620	834	8	..	215

Raneegunj Electric License (1935).—This undertaking is supplied, in bulk, from the Associated Power Company. The undertaking has made good progress during the year.

The nature of supply is as under:—

Alternating current.

400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following were the particulars of load at the close of the year:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.V.A. of transformers installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1937 ..	66	106	2	..	220
1938 ..	82	134	4	..	220
1939 ..	72	151	2	..	220

Bansberia Electric License (1935).—The undertaking receives a supply, in bulk, at high pressure from the Gourepore Electric Supply Company, Limited, at Naihati.

The nature of supply is as under:—

Alternating current.

6,000 volts, 3-phase, 400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following were the particulars of load at the close of the year:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.V.A. of transformers installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1936 ..	0·02	1	..	..	62·5
1937 ..	1·24	3	..	..	62·5
1938 ..	9·765	18	..	..	62·5
1939 ..	27	40	2	..	62·5

Barakar Electric License (1935).—This undertaking receives a supply, in bulk, at high pressure from the Dishergarh Power Supply Company, Limited.

The undertaking is making slow progress; no complaints have been received. The licensee applied for an extension of area of supply, which was under consideration of Government at the end of the year.

The nature of supply is as under:—

Alternating current.

(*a*) Bulk supply received at 3,000 volts, 3-phase, 50 cycles.

(*b*) Distribution—400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K.V.A of transformers installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1936 ..	16	34	..	..	60
1937 ..	41	55	1	..	60
1938 ..	47	65	..	..	60
1939 ..	51	76	1	..	60

Barrackpore Electric License (1936).—Very little progress was made during the year.

The supply, in bulk, by the Calcutta Electric Supply Corporation, Limited, referred to in my last report, has not yet materialised.

Generation and distribution—

(*a*) 440 volts } 3-wire system.
(*b*) 220 volts }

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K. W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1935 ..	470	351	7	..	276
1936 ..	484	371	7	..	276
1937 ..	498	409	8	..	276
1938 ..	511	423	8	..	276
1939 ..	542	451	8	..	276

Pabna Electric License (1936).—The undertaking made satisfactory progress during the year. No complaints were received.

The nature of supply is as follows:—

Alternating current.

Generation—440 volts, 3-phase, 50 cycles.

Distribution—400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K. W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1936 ..	85·5	134	12	..	120
1937 ..	257	266	35	..	120
1938 ..	383	349	56	..	120
1939 ..	423	409	57	..	120

Chandpur Electric License (1936).—Satisfactory progress has been made during the year. No complaints were received.

The nature of supply is as follows:—

Alternating current.

Generation—440 volts, 3-phase, 50 cycles.

Distribution—400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following figures are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K. W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1936 ..	54	265	..	..	58
1937 ..	114	344	3	..	58
1938 ..	122	399	4	..	158
1939 ..	137	430	4	..	158

Malda Electric License (1936).—The undertaking is developing slowly.

The nature of supply is as follows:—

Direct current.

Generation—460 volts, D. C.

Distribution—460 and 230 volts, D.C., 3-wire system.

The following were the particulars of load at the close of the year:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K. W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1937 ..	53	100	..	..	77
1938 ..	78	151	1	..	77
1939 ..	45	182	..	..	77

Nabadwip Electric License (1937).—The erection of posts for distributing mains was in hand towards the end of the year.

The licensees were given permission to lay their main submarine cable through the char land on the Nabadwip side of the river Bhagirathi under certain conditions under Government of Bengal, Department of Commerce and Labour, notification No. 1670Com., dated the 26th June 1939.

The nature of supply will be:—

Alternating current.

400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

Kalimpong Electric License (1937).—The undertaking has made some progress during the year. No complaints were received from consumers.

The nature of supply is:—

Alternating current.

3,000 volts, 3-phase, 400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The position at the close of the year was as under:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K. W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1938 ..	145	110	2	..	80
1939 ..	210	145	3	..	80

Jessore Electric License (1937).—The supply of energy to consumers commenced at the end of August 1939.

The nature of supply is as follows:—

Alternating current.

400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

The following were the particulars of load at the close of the year:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K. W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1939 ..	50	81	1	..	104

Faridpur Electric License (1937).—This undertaking is making very satisfactory progress. No complaints were received from consumers.

The nature of supply is as follows:—

Alternating current.

Generation—400 volts, 3-phase, 50 cycles.

Distribution—400 volts, 3-phase, and 230 volts, single-phase.

The following particulars of load at the close of the year are given for comparison:—

Year as at 31st December.	Connected load.	Number of consumers.			Total K. W. of generating plant installed.
		Low pressure.	Medium pressure.	High pressure.	
	K. W.				
1937 ..	172	243	7	..	120
1938 ..	220	370	10	..	120
1939 ..	295	501	11	..	120

Suri Electric License (1939).—This was granted to Mr. K. C. Dutt on the 19th April 1939. The compulsory works were not completed and the supply did not commence at the close of the year.

The nature of supply will be as under:—

Alternating current.

400 volts, 3-phase, and 230 volts, single-phase, 50 cycles.

Supply of energy outside licensed areas under section 27 of the Act.

8. The following sanctions under section 27 of the Act were granted during the year under review:—

(1) The Calcutta Electric Supply Corporation, Limited, for the supply of energy to the premises of Mr. Haripada Khan's Steel Works at "Dayalkanan," Old Benares Road, Belgachia, Howrah, subject to the condition that the said Corporation apply for an extension of their area so as to include these premises as early as possible. (Sanction, dated the 29th March 1939.)

(2) The Calcutta Electric Supply Corporation, Limited, for the supply of energy to the Serampore Municipality for street lighting in Tarapukur Lane, Mallikpara Lane and Sanipara Lane, subject to the condition that the said Corporation apply for an extension of their area so as to include these three lanes as early as possible. (Sanction, dated the 29th March 1939.)

(3) The Naihati Electric Supply Company, Limited, for the supply of energy to the East Indian Railway authorities at the Garifa station. This sanction holds good until such time as a licensee is in a position to supply energy to the station. (Sanction, dated the 22nd May 1939.)

(4) The Calcutta Electric Supply Corporation, Limited, for the supply of energy to the premises of the Textile Machinery Corporation, Limited, Basudebpur, subject to the condition that the Calcutta Electric Supply Corporation apply for an extension of their area so as to include these premises at an early date. (Sanction, dated the 17th August 1939.)

Progress made in public supply undertakings operating under section 28(1) of the Act.

9. **Kushtia.**—There has been much agitation by the Merchants' Association of Kushtia against the Supply Company.

The nature of supply is 220 volts, D. C.

The existing management has applied for a license.

Serajganj.—This undertaking has already been dealt with in the preceding pages.

Comilla.—This undertaking has also been dealt with in the preceding pages.

Tangail.—No improvement has been made in this undertaking during the year in spite of the continued pressure exercised upon the management.

The nature of supply is 220 volts, D. C.

Bhairab Bazar.—No complaints have been received from consumers and the undertaking appears to have given satisfactory service.

The nature of supply is 230 volts, D. C.

Munshiganj.—No complaints have been received from consumers and the undertaking appears to have given satisfactory service. The nature of supply is 230 volts, D. C.

Patuakhali.—The supply of energy to consumers has not been satisfactory, the supply having been completely shut down during part of the year. Many complaints have been received from consumers.

The nature of supply is 230 volts, D. C.

Sanctions granted under section 28(1) of the Act.

10. The following sanctions under section 28 (*1*) of the Act were granted during the year under review:—

(1) The Engineers' Syndicate (Bengal), Limited, Chandernagore, to supply energy from British territory to "Rutton Lodge" and to a Bazar at Chandernagore. This sanction will remain valid till such time as the premises in question fall within the area of supply of a licensee and the licensee is in a position to supply energy to them. (Sanction, dated the 5th October 1939.)

(2) The Dhakeswari Cotton Mills, Limited, Dacca, to supply energy to the Narayanganj Company whose premises are situated on the west bank of the river Lakshya. This sanction remains in force till a license is granted for the area of supply in which the said premises are situated and the licensee is in a position and agreeable to supply electricity to that company. (Sanction, dated the 6th November 1939.)

Inspection work.

11. The inspection of consumers' installations carried out during the year numbered 1,786 in addition to which, 75 miles of Calcutta Corporation's street lighting aerial lines were inspected.

The decrease in the total number of inspections carried out, when compared with the previous year, is due partly to the nature of the inspections carried out and partly to the absence, on leave, of the Electrical Adviser and Chief Electric Inspector, Bengal.

The number of notices under rule 60 received during the year was 477; and the number of notices under clause XVII of the Schedule to the Act, was 273. In addition to the above notices, letters were received from licensees reporting 78 cases of breaches of rules in consumers' installations.

The total sum received during the year by fees for inspection work was Rs. 17,693 *plus* Rs. 715-8 collected by District Magistrates under distress warrants in accordance with section 54 of the Act.

The works under the following electric licenses were inspected during the year, those marked with an asterisk were inspected at least twice during the year. It is desirable, and hoped that eventually, each licensed area be inspected at least twice a year:—

*Jessore, *Bankura, *Midnapore, *Serajganj, *Mymensingh, *Rangpur, *Asansol, *Narayanganj, *Malda, Darjeeling, Natore, Chittagong, Barisal, Barakar, Hooghly-Chinsurah, Comilla, Chandpur, Bogra, Bansberia, Nabadwip, Krishnagar, Jalpaiguri, Pabna, Rajshahi, Faridpur, Khulna, Berhampore, Dacca and Kurseong. Also Tangail and Kushtia where energy is being supplied under section 28 of the Act.

Owing to the rapid increase of licensed electrical undertakings in Bengal, the amount of inspection work to be done is rapidly increasing and it is beyond the possibilities of the present staff to cover the necessary ground.

The number of consumers' installations reported to be connected to the several licensees' works is set out in Appendix IV of this report.

Accidents.

12. The number of accidents in connection with the generation, transmission and use of electrical energy reported to this office during

the year is shown below together with corresponding figures for the years 1937 and 1938:—

Year as at 31st December.	Electrical.		Non-electrical.		Total.
	Fatal.	Non-fatal.	Fatal.	Non-fatal.	
1937 ..	15	43	1	145	204
1938 ..	18	50	1	185	254
1939 ..	13	44*	5	256	318

*No persons were involved in three cases.

The non-electrical accidents refer to falls from ladders and to mechanical causes.

A classified statement, under various headings showing the causes of electrical accidents, is given below and it will be seen that accidental charge, leakage and aerial lines are responsible for the majority of electrical accidents.

13. **Electrical accidents reported in relation to apparatus and aerial lines, 1939—**

	Fatal.	Non-fatal.	Total.	Remarks.
Electrical machineries and apparatus.	..	4	4	
Switchgear ..	1	2	3	No person was involved in one accident.
Fusegear	..	1	1	
Cranes	..	1	1	
Portable electric machines	..	2	2	
Portable lamps ..	..	6	6	
Fixed lamps	..	2	2	No person was involved in one accident.
Plugs and adaptors ..	..	5	5	
Cables and flexibles ..	1	5	6	No person was involved in one accident.
Testing and repairing, etc. ..	..	1	1	
Bus-bars	..	2	2	
Aerial lines	4	7	11	
Temporary lighting lines ..	1	1	2	
Accidental charge through leakage, etc.	9	6	15	Four persons were involved in one accident and two persons in another case. Three animals were involved in three other accidents.
Total ..	16	45	61	

NOTE.—The table shows, except where otherwise noted, the actual number of persons involved and not the number of accidents.

Remarks on some typical accidents are given below:—

(a) A young man was electrocuted while connecting temporary wiring for decorative lights to a ceiling-rose of a 220 volts D. C. circuit while the circuit was "live".

(b) A man received an electric shock while handling a metal lamp-holder while the light point was "live."

(c) While climbing a tree on a public road a man came into contact with live aerial lines which passed close to the branches of the tree and was electrocuted.

(d) A man was electrocuted while removing dead leaves from the roof of a temple. Aerial lines passed a few feet above the roof, although insulated wire had been used, the insulation had perished due to exposure and fallen off the copper conductors which were exposed at various places.

(e) A man received an electric shock while cutting through a cable which he thought was "dead" but was actually "live."

The lessons to be learnt from the above are:—

(a) and (b) Do not handle any electrical apparatus or fittings unless you are sure that the supply to that fitting or apparatus has been switched off.

(c) If trees must be climbed, do not touch any wires which pass through or near to the tree.

(d) If aerial lines are accessible from any part of a building, do not touch them even if they be insulated wires. You should inform the owner of the aerial lines that the lines should not be accessible from any part of the building except by a special appliance as required by the Indian Electricity Rules (1937).

(e) Always make sure before working on any electric cable that the cable is dead and cannot be made "live" again without your knowledge.

Traction.

14. The overhead equipment of the Calcutta Tramways Company was inspected during the year and certain defects observed. Necessary orders were issued to those responsible for the defects. As the result of yearly inspections, a considerable improvement has been obtained in the general condition.

The Calcutta Electric Supply Corporation, Limited, and the Bengal Telephone Corporation have replaced a considerable number of overhead services by underground services, which has resulted in a marked improvement.

The number of breakages of trolley and guard wires reported to this office during the last three years is given in the statement below:—

	Guard wires.	Trolley wires.
Year ending 31st December—		
1937	7	13
1938	4	16
1939	7	12

Laboratory.

15. The laboratory has expanded during the last few years in order to keep abreast of modern developments and also to cope with the steady progress of electrical enterprise in Bengal.

The importance and responsibilities of the work in the laboratory having considerably increased, proposals were under the consideration of Government to create a post of Electric Inspector to be solely in charge of the laboratory and the status of the laboratory Assistant has been raised to that of Assistant Electric Inspector.

The work carried out during the year was varied and important.

Fuller particulars of the testing and calibration work undertaken are summarised in Appendix I of this report.

The work in the laboratory was handicapped for a portion of the year by reason of the post of the Laboratory Assistant having remained vacant until the 1st August 1939. During this period Mr. M. Datta, M.Sc. (Tech.), A.M.I.E.E., was placed in charge of the laboratory in addition to his own duties as Assistant Electric Inspector, and dealt with the more important work passing through the laboratory.

The number of disputed meters tested during the year was 49.

The total fees realised during the year amounted to Rs. 1,350.

The following figures, regarding fees received, are furnished for comparison:—

Fees realized in—

		Rs.
1936	...	2,255
1937	...	3,025
1938	...	2,255
1939	...	1,330

Licensing Board, Bengal.

16. Mr. S. W. Redclift, M.I.E.E., M.I.E. (Ind.), Electrical Adviser and Chief Electric Inspector, Bengal, was the President of the Board. During the period from the 1st January 1939 to 31st March 1939 and from 14th April 1939 to 22nd October 1939 Mr. Redclift was on deputation and on leave respectively, Major A. B. Cullen, O.B.E., M.C., Senior Electric Inspector, Bengal, acted as President of the Board.

Mr. N. N. Sen Gupta, M.Sc. (Tech.) (Manchester), A.M.I.E. (Ind.), was the Secretary to the Board throughout the year.

The Licensing Board, Bengal, administered the Regulations under rule 48 (*1*) of the Indian Electricity Rules, 1937, and continued their labours throughout the year. The term of office of the members of the Board constituted by Government under its notification No. 2540Com., dated 2nd April 1936, having expired on the 1st April 1939, Government reconstituted a new Board under notification No. 1494Com., dated 12th May 1939, with effect from the 2nd April 1939.

The personnel of the Board, as reconstituted in 1939, other than the *ex-officio* members, included the following gentlemen:—

Mr. Manoranjan Sen Gupta.

Mr. E. J. Hogben, M.A. (Oxon.), A.R.C.Sc. (Lond.), Wh.Sc., M.I. (Mech.) E., M.I.E. (Ind.).

Mr. J. W. Church.

Mr. Tarak Nath Banerjee.

Mr. W. H. W. Urquhart, A.M.I. (Mech.) E.

Mr. W. Bent, A.M.I.E.E.

Mr. E. B. C. Preston, A.M.I.E.E.

Mr. S. C. Roy.

Thirty-one weekly meetings of the Board's Working Committee and five full Board meetings were held during the year.

A total of eleven examinations for supervisors and workmen were held at Calcutta and Dhanbad and the total number of candidates enlisted for these examinations were 254 supervisors and 828 workmen.

The number of contractors' licenses, supervisors' certificates and workmen's permits issued during the year and the total number of such licenses, certificates and permits issued since the formation of the Board up to the 31st December 1939 were as stated below:—

	Issued during 1939.	Total number issued up to 31st December 1939.
Contractors' licenses	82	223
Supervisors' certificates	148	831
Workmen's permits	514	1,612

A total of 124 contractors' licenses, 613 supervisors' certificates and 1,027 workmen's permits were renewed during the year.

A total of 89 applications for contractors' licenses, 461 applications for supervisors' certificates and 743 applications for workmen's permits were received during the year.

Rule 48 of the Indian Electricity Rules, 1937, was in force in Calcutta and in the districts of the 24-Parganas and Howrah and in the Sadar and Serampore subdivisions of the district of Hooghly and also in the subdivision of Asansol in the district of Burdwan during the year and the question of extending the application of rule 48 to other parts of Bengal was under the consideration of Government.

A notice was published by Government in the *Calcutta Gazette* of the 30th March 1939 drawing attention of the general public to the requirements of rule 48 of the Indian Electricity Rules, 1937, and also to the penalty for a breach of the said rule. It was also pointed out in the same notice that persons holding supervisors' certificates of competency and workmen's permits were not entitled to undertake electrical installation work independently of licensed electrical contractors.

I desire to place on record my thanks to those gentlemen who served on the Board and also to the Secretary who carried out his duties with zeal and efficiency.

The personnel of the Board, as reconstituted in 1937, [illegible] the following [illegible]:

[illegible]

[illegible] meetings of the Board [illegible] during the year.

[illegible]

A total of 151 [illegible] were [illegible] during the year.

A total of 80 applications for [illegible]

[illegible] received during the year.

[illegible] Rules, 1931, [illegible] and Howrah [illegible]

[illegible]

APPENDIX I.

Electrical laboratory attached to the office of the Electrical Adviser and Chief Electric Inspector, Government of Bengal.

Summary of instruments, etc., tested and calibrated during 1939. Certificates were issued for (b) and (c).

	Number.
(a) Disputed electricity meters from consumers or licensees ..	49
(b) Articles from other Government departments—	
D. C. Century Testing Set	1
A. C. Polyphase Rotating Sub-standard Watt-hour meter ..	1
(c) Articles from commercial firms and private parties—	
Polyphase Power Factor meter	1
Ammeters	3
Milli-ammeter	1
Thermo-ammeter	1
Voltmeters	5
Cell-testing Voltmeters	4
D. C. Amphere-hour meters	10
A. C. Polyphase Kilowatt-hour meters (high voltage) ..	3
A. C. Polyphase Rotating Sub-standard Kilowatt-hour meter	1
Megger Insulation Tester	1
Immersion Heater	1

	Number.	Fees.
		Rs.
1. Disputed meters	49	525
2. Instruments from Government departments ..	2	180
3. Instruments from commercial departments and private parties	31	645
Total ..		1,350

APPENDIX II.

Licensed electrical undertakings in Bengal.

Data compiled from the statutory accounts.

Name of licensee or undertaking.	Year ending—	Capital expenditure at the end of the year.	Units.		Cost in annas per unit generated excluding depreciation and reserve.	Average price in annas obtained per unit sold.
			Generated.	Sold.		
		Rs.				
Calcutta Electric Supply Corporation, Limited.	31st December 1938.	11,63,25,859	429,716,188	365,140,289	0·334	0·772
Barrackpore ..	31st December 1939.	3,28,015	480,610	404,780	2·44	3·7
Darjeeling ..	31st March 1939	9,23,449	1,687,589	1,335,079	0·66	2·2
Hooghly-Chinsura.	31st December 1938.	4,31,562	305,986	237,385	2·09*	4·77
Burdwan ..	31st December 1938.	6,04,848	667,070	513,001	2·139	3·519
Mymensingh ..	31st December 1938.	2,89,457	395,530	308,575	2·3074	2·627
Dacca ..	31st December 1938.	16,64,495	2,116,670	1,553,623	1·5468	3·4207
Chittagong ..	31st March 1939	5,05,147	630,705	464,110	2·11*	3·83
Berhampore ..	31st March 1939	1,45,447	103,071	66,204	2·769	4·9235
Rangpur ..	31st December 1938.	2,19,942	199,103	158,649	1·79	3·8
Bhatpara Riverside.	31st March 1939	2,85,635	425,590	369,779	1·9675*	3·114
Kurseong ..	31st March 1939	2,86,176	195,875	152,041	1·94	3·241
Narayanganj ..	31st March 1939	3,36,594	349,389	267,908	1·69	3·46
Asansol ..	31st December 1939.	1,46,983	201,275	200,617	2·89*	4·63
Gourepore ..	31st March 1939	40,95,198	37,337,580	3,392,205	0·282	0·522
Associated Power	31st August 1939	19,36,027	10,653,980	9,620,264	0·3601	0·6582
Jalpaiguri ..	31st March 1939	1,59,672	237,857	197,909	1·82	3·41
Midnapore ..	31st March 1939	2,91,997	249,658	198,349	2·945	4·205
Naihati ..	31st December 1938.	83,929	164,876	154,071	2·2705*	3·0147
Khulna ..	31st March 1939	1,67,478	228,865	189,914	1·82	3·6
Barisal ..	31st December 1939.	1,52,216	221,852	183,921	1·86	3·97
Rajshahi ..	31st March 1939	1,68,341	200,743	173,309	2·04	3·65
Krishnagore ..	31st March 1939	2,10,834	116,455	91,750	2·778	3·205
Faridpur ..	31st March 1939	95,525	123,094	104,001	2·85	3·64
Raneeganj ..	31st March 1939	69,685	60,410	58,117	3·338*	3·927
Pabna ..	31st March 1939	1,36,742	238,962	195,574	1·48	2·63
Bankura ..	31st March 1939	2,36,756	68,405	45,842	4·245	4·684
Chandpur ..	31st December 1939.	1,27,920	89,135	69,724	3·25	5·36
Dishergarh ..	31st October 1939.	†9,09,618	25,802,179	22,697,050	0·2408	0·4336
Malda ..	31st December 1938.	75,814	61,378	20,313	3·058	5·424
Barakar ..	31st December 1938.	18,211	39,887	34,450	3·504*	3·046
Bansberia ..	31st December 1938.	31,998	708	631	50·96*	5·858
Kalimpong ..	31st March 1939	1,32,025	42,975	40,001	5·93	4·28
Tangail ..	Accounts not available.					
Comilla ..						
Serajganj ..						
Bhairab Bazar						
Munshiganj ..						
Kushtia ..						
Patuakhali ..						

*Electricity is not generated by these licensees but purchased in bulk.

†Excluding capital expended on Power House which supplies areas in Bihar as well as Bengal.

APPENDIX III.

List of licenses in force granted by the Government of Bengal [including sanctions under section 28 (1) for public supply].

Corrected up to 31st December 1939.

No.	Names of licenses.	Year granted.	Date of expiry of license or sanction.	Names and addresses of licensees or Managing Agents.
1	The Calcutta Electric License.	1907	20th October 1948.	The Calcutta Electric Supply Corporation, Limited, Victoria House, Calcutta.
2	The Calcutta (Cantonment, etc.) Electric License.	1908	20th October 1948.	Ditto.
3	The Calcutta River License	1912	20th October 1948.	Ditto.
4	The Darjeeling Electric License.	1913	....	The Municipality of Darjeeling.
5	The Hooghly-Chinsura Electric License.	1919	2nd December 1969.	Messrs. Nursingsahay Mudungopal, Managing Agents, The East India Electric Supply and Traction Company, Limited, 29, Strand Road, Calcutta.
6	The Bhatpara, Noapara, Garulia and North Barrackpore Electric License.	1934	20th February 1970.	The Calcutta Electric Supply Corporation, Limited, Victoria House, Calcutta.
7	The Bally-Utterpara Electric License.	1920	20th October 1958.	Ditto.
8	The Burdwan Electric License.	1920	1st August 1940	Messrs. H. V. Low and Company, Limited, Managing Agents, Electric Supply Company of Burdwan, Limited, 3, Synagogue Street, Calcutta.
9	The Mymensingh Electric License.	1922	7th July 1972	Messrs. Development of Industries (India), Limited, Managing Agents, The Mymensingh Bank, Commerce and Industry, Limited (Mymensingh Electric Supply), 135, Prinsep Street, Calcutta.
10	The Dacca Electric License	1925	16th March 1965	Messrs. Octavius Steel and Company, Limited, Managing Agents, The Dacca Electric Supply Company, Limited, 14, Old Court House Street, Calcutta.
11	The Kamarhatty, Belgharia and Agarpara Electric License.	1926	20th October 1948.	The Calcutta Electric Supply Corporation, Limited, Victoria House, Calcutta.
12	The Dum Dum Electric License.	1926	20th October 1948.	Ditto.
13	The Howrah Electric License.	1926	20th October 1958.	Ditto.
14	The Chittagong Electric License.	1926	22nd December 1956.	The Chittagong Engineering and Electric Supply Company, Limited, Chittagong.
15	The Berhampore Electric License.	1928	8th February 1958.	Messrs. S. C. Nag & Co., Managing Agents, The Berhampore Electric Supply Company, Limited, Berhampore (Bengal).
16	The Serampore Electric License.	1928	20th October 1958.	The Calcutta Electric Supply Corporation, Limited, Victoria House, Calcutta.
17	The Rangpur Electric License.	1928	16th August 1978.	The Rangpur Electric Supply Association, Limited, Rangpur (Bengal).
18	The Tangail Electric Supply under section 28(*1*).	1928	30th June 1941	Messrs. Tangail Improvement Company, Limited, Tangail (Mymensingh).

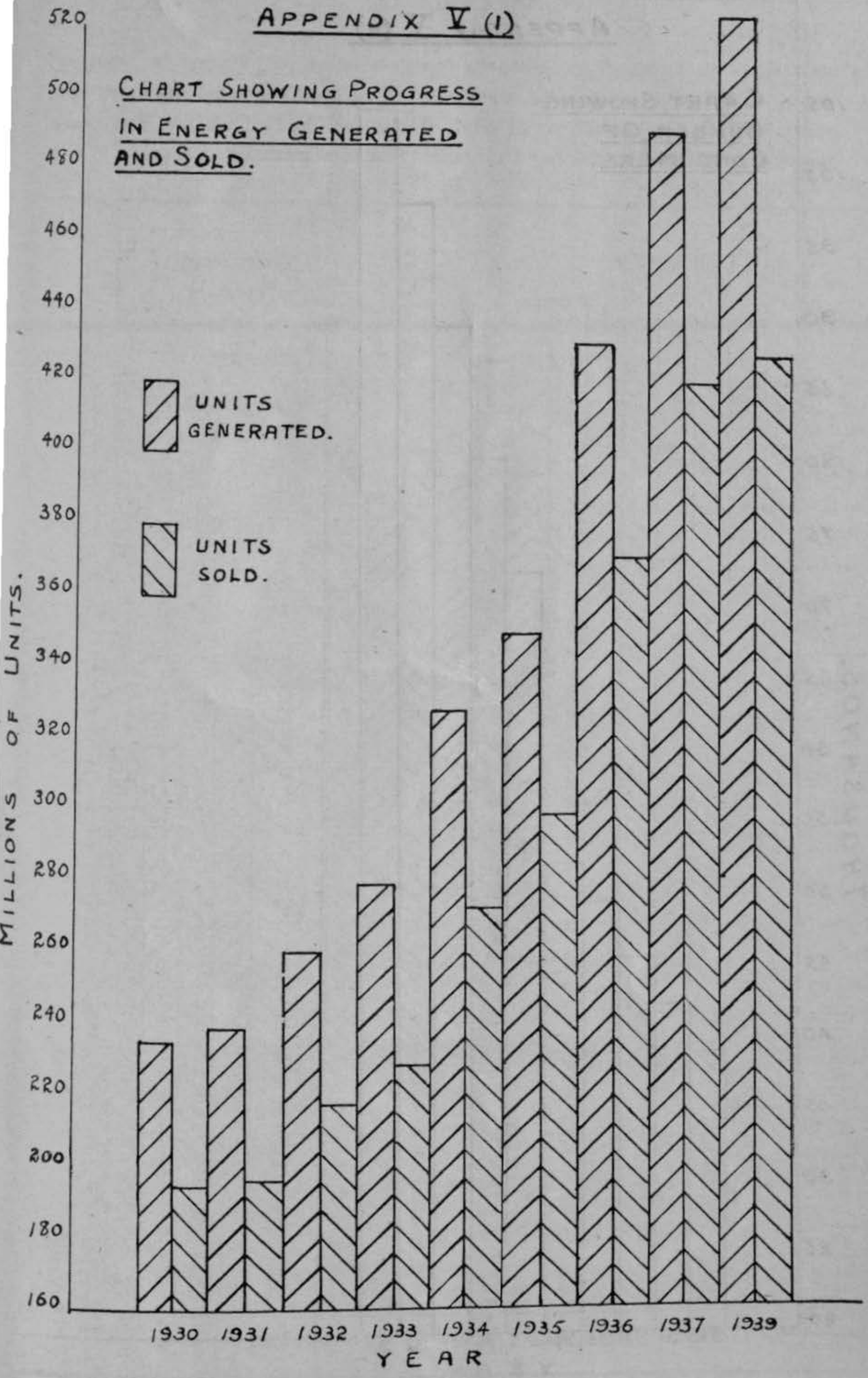
No.	Names of licenses.	Year granted.	Date of expiry of license or sanction.	Names and addresses of licensees or Managing Agents.
19	The Bhatpara Riverside Electric (Distribution) License.	1929	27th April 1979	Messrs. Development of Industries (India), Limited, Managing Agents, The Riverside (Bhatpara) Electric Supply Company, Limited, 135, Prinsep Street, Calcutta.
20	The Kurseong Electric License.	1929	21st December 1979.	Messrs. Goenka and Company, Managing Agents, The Kurseong Hydro-Electric Supply Company, Limited, Kurseong.
21	The Lillooah Electric License.	1930	20th October 1958.	The Calcutta Electric Supply Corporation, Limited, Victoria House, Calcutta.
22	The Narayanganj Electric License.	1930	15th November 1980.	The Chittagong Engineering and Electric Supply Company, Limited, Narayanganj (Branch), Chittagong.
23	The Rishra-Konnagar and Kotrung Electric License.	1931	20th October 1958.	The Calcutta Electric Supply Corporation, Limited, Victoria House, Calcutta.
24	The Comilla Electric Supply, Limited, under section 28(*1*).	1931	31st March 1940	The Comilla Banking Corporation, Limited, Managing Agents, The Comilla Electric Supply, Limited, Comilla.
25	The Serajganj Electric License (revoked), purchased by the Lahore Electric Supply Company, Limited, working under section 28(*1*).	1931	31st March 1940	The Lahore Electric Supply Company, Limited, Bharat Building, Lahore, Branch Serajganj.
26	The Asansol Electric License.	1932	21st November 1982.	The Bengal Trust, Limited, Managing Agents, The Asansol Electric Supply Company, Limited, Asansol.
27	The Khulna Electric License.	1932	6th December 1982.	Rai Mahendra Kumar Ghosh Bahadur, M.A., B.L., Managing Agents, The Khulna Electric Supply Corporation, Limited, Khulna.
28	The Naihati Electric License.	1932	7th December 1982.	Messrs. Sanyal & Co., Managing Agents, The Naihati Electric Supply Company, Limited, 309, Bowbazar Street, Calcutta.
29	The Midnapore Electric License.	1932	20th December 1982.	Messrs. B. N. Elias & Co., Ltd., Norton Buildings, Calcutta.
30	The Bankura Electric License.	1932	20th December 1982.	Ditto.
31	The Dishergarh Electric License.	1932	19th December 1982.	Messrs. Andrew Yule & Co., Ltd., Managing Agents, The Dishergarh Power Supply Company, Limited, 8, Clive Row, Calcutta.
32	The Jalpaiguri Electric License.	1933	12th June 1983	Messrs. Indo-Swiss Trading Company, Limited, Managing Agents, The Jalpaiguri Electric Supply Company, Limited, 2, Church Lane, Calcutta.
33	The Krishnagar Electric License.	1933	31st March 1983	Messrs. B. N. Elias & Co., Ltd., Norton Buildings, Calcutta.
34	The Baidyabati, Champdany and Bhadreswar Electric License.	1933	20th October 1958.	The Calcutta Electric Supply Corporation, Limited, Victoria House, Calcutta.
35	The Gourepore Electric License.	1933	20th March 1983	Messrs. Barry & Co., Managing Agents, The Gourepore Electric Supply Company, Limited, 2, Fairlie Place, Calcutta.
36	The Panihati, Khardah and Tittagarh Electric License.	1933	20th October 1958.	The Calcutta Electric Supply Corporation, Limited, Victoria House, Calcutta.

No.	Names of licenses.	Year granted.	Date of expiry of license or sanction.	Names and addresses of licensees or Managing Agents.
37	The Barisal Electric License	1933	9th December 1983.	Messrs. Roy & Co., Ltd., Managing Agents, The Barisal Electric Supply Company, Limited, 1B, Old Post Office Street, Calcutta.
38	Kushtia Electric Supply under section 28(*1*).	1933	29th February 1940.	Messrs. C. Bhadra & Co., Kushtia, Eastern Bengal Railway.
39	The Associated Power (Bengal) Electric License.	1934	19th September 1984.	Messrs. Andrew Yule & Co., Ltd., Managing Agents, The Associated Power Company, Limited, 8, Clive Row, Calcutta.
40	Bhairab Bazar Electric Supply under section 28(*1*).	1935	22nd January 1945.	Nirmala Engineering Works, Bhairab, Managing Agents, Bhairab Electric Supply, 31, Tikatuly, Dacca.
41	The Bansberia Electric License.	1935	3rd May 1970	Messrs. Nursingsahay Mudungopal, Managing Agents, The East India Electric Supply and Traction Company, Limited, 29, Strand Road, Calcutta.
42	The Budge Budge and Bauria Electric License.	1935	30th November 1980.	The Calcutta Electric Supply Corporation, Limited, Victoria House, Calcutta.
43	The Rajshahi Electric License.	1935	28th November 1985.	The Chittagong Engineering and Electric Supply Company, Limited, Chittagong.
44	The Barakar Electric License	1935	29th November 1985.	Babu Hari Ram Agarwalla, Barakar, East Indian Railway.
45	The Raneeganj Electric License.	1935	7th December 1985.	Messrs. Trivedi & Bajpaie, Managing Agents, The Raneeganj Electric Supply Company, Limited, 14-2, Old China Bazar Street, Calcutta.
46	The Pabna Electric License	1936	23rd April 1986	Messrs. H. K. Banerjee & Sons, Managing Agents, The Pabna Electric Supply Company, Limited, Narayanganj.
47	The Chandpur Electric License.	1936	25th June 1986	Messrs. Chatterjee, Dass and Company, Chandpur.
48	The Malda Electric License	1936	26th September 1986.	Messrs. Behani & Co., Malda.
49	The Barrackpore Electric License.	1936	2nd December 1947.	Messrs. Kilburn & Co., Managing Agents, The Barrackpore Electric Supply Company, Limited, 4, Fairlie Place, Calcutta.
50	The Kalimpong Electric License.	1937	22nd May 1987	Messrs. H. K. Banerjea & Sons, Managing Agents, The Kalimpong Electric Supply Company, Limited, H. K. Banerjea Road, Narayanganj.
51	The Nabadwip Electric License.	1937	10th August 1987	Messrs. B. N. Elias & Co., Ltd., Norton Buildings, Calcutta.
52	The Jessore Electric License	1937	6th February 1987.	Mesrs. S. K. Basu & Co., Ltd., 402, Upper Chitpore Road, Calcutta.
53	The Faridpur Electric License.	1937	15th January 1987.	The Chittagong Engineering and Electric Supply Company, Limited, Chittagong.
54	Munshiganj Electric Supply under section 28(*1*).	1937	13th August 1942	The Munshiganj Ice Company, Munshiganj, Dacca.
55	Patuakhali Electric Supply under section 28(*1*).	1937	31st March 1940	The Patuakhali Electric Supply Company, Limited, 7B, Indra Roy Road, Calcutta.
56	The Suri Electric License	1939	19th April 1949	Mr. K. C. Datta, 83, Chowringhee Road, Calcutta.

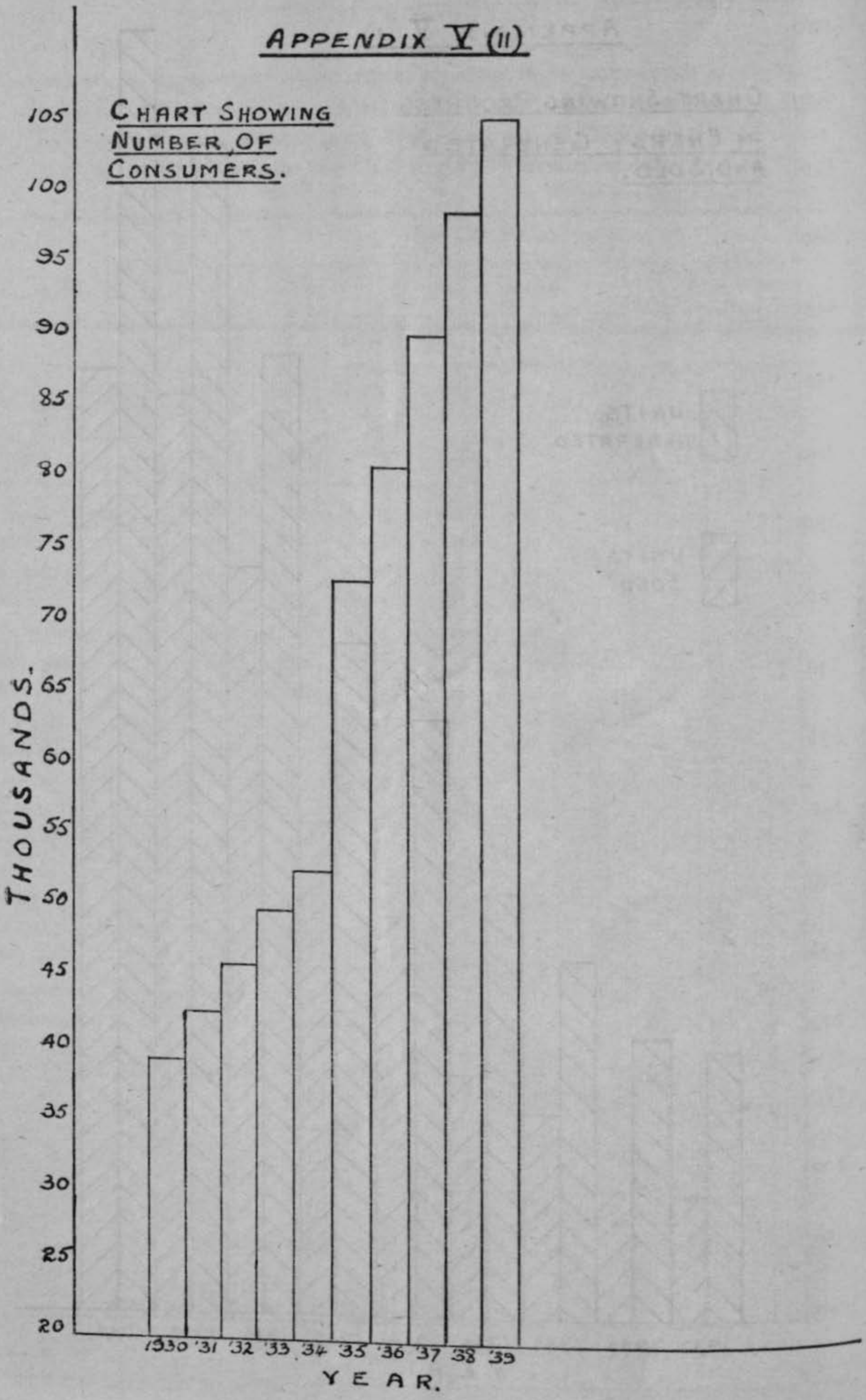
APPENDIX IV.

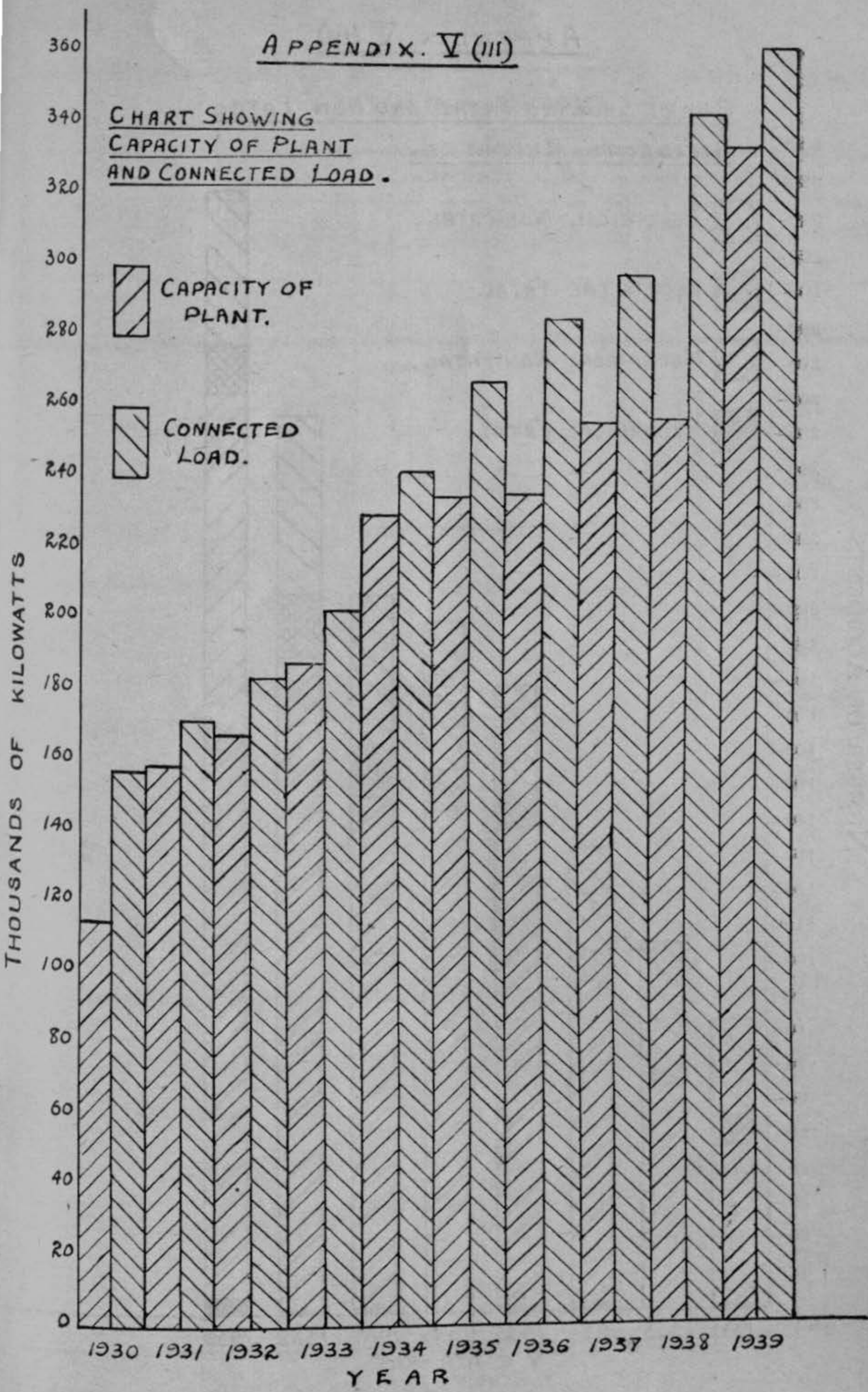
The number of consumers' installations reported to be connected to licensees' works in the several licensed areas, and those in other areas supplied under section 28 (1) of the Act, as at 31st December 1939, are set out below together with particulars for 1937 and 1938 for comparison.

Area of supply.	Number of installations.								
	Low pressure.			Medium pressure.			High pressure.		
	1937.	1938.	1939.	1937.	1938.	1939.	1937.	1938.	1939.
Areas supplied by the Calcutta Electric Supply Corporation, Limited.	73,929	80,129	84,501	1,802	1,850	2,148	2[illegible]3	272	280
Barrackpore ..	409	423	451	8	8	8	..	..	..
Darjeeling ..	1,110	1,228	1,360	14	14	16	3	3	3
Hooghly-Chinsura	909	987	1,033	35	42	47	..	..	..
Burdwan ..	841	837	824	81	83	84	1	1	1
Mymensingh ..	638	663	708	7	7	8	..	..	..
Dacca ..	2,266	2,485	2,666	123	128	145	..	..	2
Chittagong ..	1,419	1,535	1,596	41	50	56	1	1	1
Berhampore ..	238	250	274	6	6	7	..	..	..
Rangpur ..	417	446	438	4	3	3	..	..	..
Bhatpara Riverside (distribution).	384	419	447	26	34	44	..	..	..
Kurseong ..	336	367	393	2	3	3	..	..	..
Narayanganj ..	632	714	766	25	33	36	..	..	..
Comilla [sanction under section 28(1)].	327	447	539	10	10	13	..	..	..
Serajganj [sanction under section 28(1)].	222	249	271	1	1	1	..	..	..
Asansol ..	311	361	427	6	8	10	..	..	..
Khulna ..	210	260	330	11	10	11	..	..	..
Naihati ..	180	222	244	5	7	8	..	..	
Midnapore ..	204	280	319	14	15	15	1	2	3
Bankura ..	94	152	212	2	7	9	..	..	..
Dishergarh ..	3	4	4	1	..	..	10	10	10
Krishnagar ..	141	202	231	3	6	8	..	..	..
Jalpaiguri ..	364	426	477	9	11	13	..	..	..
Gouripore ..	..	..	..	1	1	1	7	7	7
Barisal ..	199	287	374	4	3	6	..	..	..
Associated Power (Bengal).	..	..	..	..	..	..	6	7	12
Rajshahi ..	455	647	834	6	7	8	..	..	..
Raneeganj ..	106	134	151	2	4	2	..	..	..
Bansberia ..	3	18	40	..	..	2	..	..	..
Barakar ..	55	65	76	1	..	1	..	..	..
Pabna ..	266	349	409	15	56	57	..	..	..
Chandpur ..	344	399	430	3	4	4	..	..	..
Malda ..	100	151	182	..	1	..	..	..	..
Faridpur ..	243	370	501	7	10	11	..	..	..
Jessore ..	..	..	81	..	..	1	..	..	..
Kushtia ..	..	3	40	..	..	..	..	..	..
Tangail ..	111	120	121	..	..	..	..	..	..
Bhairab Bazar ..	35	37	60	..	..	..	..	..	..
Munshiganj ..	..	23	29	..	..	..	..	..	..
Patuakhali ..	..	69	73	..	..	1	..	..	..
Kalimpong ..	..	110	145	..	2	3	..	..	..

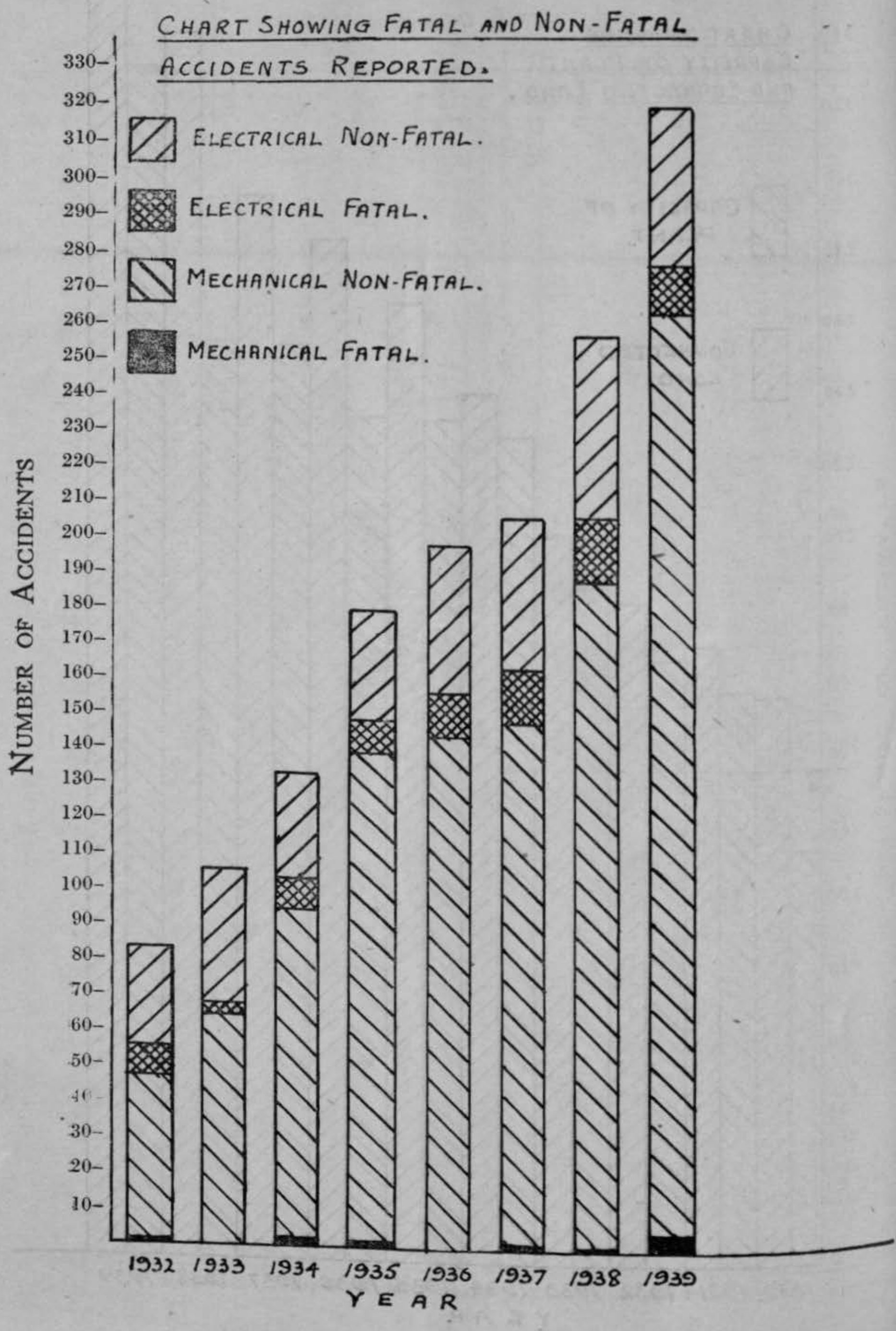

APPENDIX V (1)
CHART SHOWING PROGRESS
IN ENERGY GENERATED
AND SOLD.
UNITS GENERATED.
UNITS SOLD.
MILLIONS OF UNITS.
520
500
480
460
440
420
400
380
360
340
320
300
280
260
240
220
200
180
160
1930 1931 1932 1933 1934 1935 1936 1937 1939
YEAR

APPENDIX V (II)




APPENDIX. V (III)
CHART SHOWING
CAPACITY OF PLANT
AND CONNECTED LOAD.
CAPACITY OF PLANT.
CONNECTED LOAD.
THOUSANDS OF KILOWATTS
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
1930
1931
1932
1933
1934
1935
1936
1937
1938
1939
YEAR

APPENDIX V (IV)



APPENDIX VI.

Statement showing net rates charged for energy used for domestic purposes (as at 31st December 1939).

Undertaking.	Net rates in annas per unit charged for domestic purposes as at 31st December 1939.			
	Lights.	Fans.	Lights and fans combined.	For all purposes other than lights and fans.
All areas supplied by Calcutta Electric Supply Corporation, Limited.	..	..	2·0	0·75
Barrackpore* ..	..	..	5·25	3·0 to 2·5 Motors. 1·5 to 0·75 Heating, cooking, etc.
Darjeeling ..	3·5	0·75 Exhaust Fan.	3·5	1·5 from April to October. 1·75 from November to March.
Hooghly-Chinsurah ..	5·5	5·5	5·0 to 1·5	3·5 to 1·75 Small motors. 3·0 Heating, cooking, etc.
Burdwan ..	..	..	6·0 *plus* Rs. 5 per month per K. W.	4·0 Small motors. 2·0 Heating, cooking, etc.
Mymensingh ..	6·5	..	6·0	4·0
Dacca ..	..	..	4·0	2·5 Refrigerating. 3·25 Other appliances.
Chittagong ..	..	..	6·0 Ordinary houses 4·5 Public and charitable institutions.	2·0
Berhampore ..	7·0	7·0	7·0	3·5
Rangpur ..	6·0	5·0	5·5	2·0
Bhatpara (riverside)	6·0	5·0	5·0	3·0
Kurseong ..	5·5	..	5·5	0·75
Narayanganj ..	..	..	6·0 Ordinary houses 4·5 Public and charitable institutions.	2·5
Asansol ..	6·5	5·5	6·0	3·0
Gourepore ..	This licensee does not supply domestic consumers.			
Associated Power (coal-field areas).	..	..	3·0 to 1·25	3·0 to 1·25
Jalpaiguri ..	7·0	6·0	6·5 to 4·0	5·0 to 4·0 Motors. 2·5 to 2·0 Heating, cooking, etc.
Midnapore ..	6·5	6·5	6·5	2·0
Naihati ..	6·0	5·0	5·0	4·0 to 3·0 Motors. 2·0 Heating, cooking, etc.
Khulna ..	6·0	6·0	6·0	3·0
Barisal ..	..	..	6·0 to 4·0	2·0
Rajshahi ..	..	..	5·5 to 5·0 Ordinary houses. 5·0 Public and charitable institutions.	3·0

*The licensees pay the Government duty on behalf of consumers.

Undertaking.	Net rates in annas per unit charged for domestic purposes as at 31st December 1939.			
	Lights.	Fans.	Lights and fans combined.	For all purposes other than lights and fans.
Krishnagar ..	..	..	6·0	2·0
Faridpur ..	6·0	6·0	6·0 Ordinary houses 4·0 Charitable and public institutions.	3·0
Raneeganj ..	6·5	6·5	6·5	5·0 to 4·0 Motors. 3·0 Heating, cooking etc.
Pabna ..	6·0	6·0	6·0	3·0
Bankura ..	6·5	6·5	6·5	2·0
Chandpur ..	7·0	6·5	6·5	3·5
Dishergarh (coal-field areas).	..	..	3·0 to 1·25	3·0 to 1·25
Malda ..	6·0	6·0	6·0	3·0
Barakar ..	5·5	5·5	5·5	3·5
Bansberia ..			Not available.	
Kalimpong ..	..	..	7·0 to 4·0	3·0 to 2·0
Tangail ..	7·0	7·0	7·0	5·0 to 1·0 Motors. 3·0 Heating, cooking, etc.
Comilla ..	6·0	6·0	6·0	5·0 to 3·0 Motors. 3·0 Heating, cooking, etc.
Serajganj ..	..	..	6·0 to 5·0	2·625
Bhairab Bazar ..	8·0	7·0	6·0	4·0
Munshiganj ..	..	..	7·0	..
Kushtia ..	7·0	7·0	7·0	4·0
Patuakhali ..			Not available.	
Jessore ..	6·5	6·5	6·5	3·0 Motors. 2·0 Heating, cooking etc.

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